

App. No. 10/522,045
Office Action Dated September 19, 2007

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REMARKS

Favorable reconsideration is respectfully requested in view of the following remarks. Applicants appreciate the courtesy shown by the Examiner in discussing this case with Applicants' representative on December 5, 2007. The discussions of the interview are reflected in the following remarks. Claims 1, 4-12 and 14-25 are pending.

Claims 1, 6-8, 10, 14 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato (US Publication No. 2001/0009759) in view of Calomiris (US Patent No. 6010869). Applicants respectfully traverse the rejection.

Sato teaches a method of separating viruses. The method of Sato involves adding virus-binding particles to a sample. The virus-binding particles which have adsorbed thereon the viruses in a sample are then separated from the sample by centrifugation. The virus-bound particles thus separated from the sample are then washed with a buffer, and then treated with a salt solution to dissociate viruses from the virus-bound particles. However, nothing in Sato teaches or suggests pouring the liquid sample into a centrifugation tube having a filter that divides an inner space of the tube into an upper part and a lower part and water-absorbing resin particles disposed on the filter, pouring a collecting solution into the tube so as to collect the microorganism or the cell caught on the surface of the particles, and then centrifuging the tube so that the collecting solution passes through the filter to move toward the bottom of the tube. Therefore, claim 1 and the dependent claims therefrom are patentable over Sato.

The rejection relies on Calomiris for binding of the virus to the particles on a filter that divides a centrifuge tube into an upper part and a lower part. The rejection's reliance is misplaced. More particularly, Calomiris discloses isolating microorganisms in a supernatant by centrifugation through a separation column, which contains solutes such as sucrose, CsCl, Percoll etc. The rejection contends that the separation column of Calomiris corresponds to the filter of claim 1. However, the separation method of Calomiris involves centrifuging a tube containing a solution that is filled from bottom up, and as such, does not involve centrifuging a tube having a filter that divides an inner space of the tube into an upper part and a lower part as required by claim 1. In fact, nothing in the references teaches or suggests a method using a filter as required by claim 1. Therefore, even if Calomiris and Sato are combined, the references would still fail to meet claim 1. Accordingly, for at least these reasons, claim 1 and dependent claims therefrom are patentable over Calomiris and Sato, taken together or separately.

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The rejection further contends that it would have obvious to one of ordinary skill in the art at the time of the invention to have modified the method of Sato by performing the step of binding the virus to the particles on a filter in a centrifuge tube as suggested by Calomiris. The rejection also mentions that the method of Calomiris is advantageous because it allows for greater recovery of microorganisms from environmental samples and thus greater detection sensitivity. However, nothing in the reference teaches or suggests a method that utilizes a centrifuge tube having water-absorbing resin particles disposed on the filter such that when the tube is centrifuged, the collection solution passes through the filter and separates from the water-absorbing resin particles disposed on the filter.

Moreover, it is questionable whether Sato and Calomiris would produce an operative combination. That is, it is not all clear whether the separation column of Calomiris would be operable upon attempting to centrifuge the virus-bound particles on top of the column so as to separate the salt solution of Sato from the virus-bound particles disposed on the column. Therefore, it would not have been obvious to combine Calomiris and Sato. Accordingly, claim 1 and the dependent claims are further removed from the references for these reasons.

Claims 5 and 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato in view of Calomiris as applied to claim 1 above and in further view of Wardlaw (US Publication No. 2001/0033808). Applicants respectfully traverse the rejection.

Sato and Calomiris have been distinguished above. Wardlaw does not remedy the deficiencies of Sato and Calomiris. Claims 5 and 11-12 further limit claim 1. Therefore, claims 5 and 11-12 are patentable over the references for at least the same reasons mentioned above. Applicants do not concede the correctness of the rejection.

Claims 9 and 16-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato in view of Calomiris as applied to claims 1, 8 and 14 above and in further view of Britschgi et al. (US Patent No. 5,726,021). Applicants respectfully traverse the rejection.

Sato and Calomiris have been distinguished above. Britschgi does not remedy the deficiencies of Sato and Calomiris. Claims 9 and 16-24 further limit claim 1. Therefore, claims 9 and 16-24 are patentable over the references for at least the same reasons mentioned above. Applicants do not concede the correctness of the rejection.

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Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sato in view of Calomiris as applied to claims 1 and 14 above and in further view of Krupey (US Patent No. 5,658,779). Applicants respectfully traverse the rejection.

Sato and Calomiris have been distinguished above. Krupey does not remedy the deficiencies of Sato and Calomiris. Claim 15 further limits claim 1. Therefore, claim 15 is patentable over the references for at least the same reasons mentioned above. Applicants do not concede the correctness of the rejection.

In view of the above, favorable reconsideration in the form of a notice of allowance is requested. Any questions or concerns regarding this communication can be directed to the attorney-of-record, Douglas P. Mueller, Reg. No. 30,300, at (612) 455.3804.

Respectfully Submitted,

Dated: December 19, 2007



A handwritten signature in black ink, appearing to be "D. Mueller", written over a horizontal line.

Douglas P. Mueller
Reg. No.: 30,300
Hamre, Schumann, Mueller & Larson, P.C.
225 South Sixth Street
Suite 2650
Minneapolis, MN 55402
612.455.3800

DPM/ym